

**LEGISLATIVE COUNCIL BRIEF**

**Air Pollution Control Ordinance (Cap. 311)**

**Air Pollution Control (Vehicle Design Standards) (Emission)  
(Amendment) Regulation 2017**

**INTRODUCTION**

The Secretary for the Environment, after consultation with the Advisory Council on the Environment, has made, under section 43 of the Air Pollution Control Ordinance (Chapter 311), the Air Pollution Control (Vehicle Design Standards) (Emission) (Amendment) Regulation 2017, at **Annex A**, to implement in phases Euro VI emission standards for newly registered motor vehicles (except diesel private cars, buses of design weight not more than 9 tonnes, light buses of design weight more than 3.5 tonnes, motor cycles and tricycles); and to tighten the emission standards for newly registered diesel private cars from California LEV II to LEV III, starting from 1 July 2017.

**BACKGROUND**

2. To improve roadside air quality and protect public health, our standing policy is to tighten motor vehicle fuel and emission standards in line with international developments when there is an adequate supply of compliant fuels and vehicles on the local market. With the support of the Advisory Council on the Environment (ACE) and approval of the Legislative Council, we have been tightening the emission standards for newly registered vehicles as follows, having regard to the prevailing standards at that time –

<b>Vehicle Class</b>	<b>Emission Standard</b>	<b>Implementation Date for Newly Registered Vehicles</b>
Private car (diesel)	California LEV II	1 January 2006

<b>Vehicle Class</b>	<b>Emission Standard</b>	<b>Implementation Date for Newly Registered Vehicles</b>
Motor cycle and tricycle	Euro III	1 January 2007
Private car (petrol) and taxi	Euro V	1 June 2012
Goods vehicle (except diesel light goods vehicle with design weight not more than 3.5 tonnes), light bus and bus	Euro V	1 June 2012
Diesel light goods vehicle with design weight not more than 3.5 tonnes	Euro V	31 December 2012

3. The European Union (EU) started tightening emission standards for newly registered vehicles (except motor cycles and tricycles) in phases to Euro VI on 31 December 2013, according to the following timetable :

<b>Category of Vehicles</b>	<b>Commencement Date</b>	
	<b>Euro VI On Board Diagnostic (OBD)<sup>[1]</sup> Phase A/B</b>	<b>Euro VI OBD Phase C</b>
Heavy Duty Vehicle <sup>[2]</sup>	31 December 2013	31 December 2016
	<b>Euro 6b<sup>[3][4]</sup> OBD Euro 6-1</b>	<b>Euro 6c<sup>[5]</sup> OBD Euro 6-2</b>
Light Duty Vehicle (passenger car)	1 September 2015	1 September 2018
Light Duty Vehicle (goods vehicle)	1 September 2016	1 September 2019

4. The initial phase of the tightening was the introduction of more stringent

<sup>1</sup> Definition of OBD as defined in EU Commission Regulation 582/2011 is “A system on board a vehicle or connected to an engine which has the capability of detecting malfunctions, and, if applicable, of indicating their occurrence by means of an alert system, of identifying the likely area of malfunction by means of information stored in computer memory, and of communicating that information off-board”.

<sup>2</sup> EU defines heavy duty vehicles as vehicles of design weight more than 3.5 tonnes, irrespective of their fuel types. Smaller vehicles are called light duty vehicles.

<sup>3</sup> By now, Euro 6a has been superseded by Euro 6b. Vehicles in compliance with Euro 6a can no longer register in EU.

<sup>4</sup> Euro 6b adopts a revised measurement procedure for particulate matters and a preliminary particle number standard for petrol vehicles with direct injection engines.

<sup>5</sup> Euro 6c adopts a final particle number standard for petrol vehicles with direct injection engines.

emission standards in the certification emission test as well as other requirements such as new testing procedures for heavy duty vehicles, more comprehensive checking on emissions by the OBD system, etc. The subsequent phases mainly involve tightening in stages the requirements for the OBD system.

5. A table showing the Euro V and Euro VI emission standards is at **Annex B**. Compared with their Euro V counterparts, Euro VI heavy duty diesel vehicles emit about 80% less nitrogen oxides (NO<sub>x</sub>) and 50% less respirable suspended particulates (RSP or PM<sub>10</sub>) while Euro VI light duty diesel vehicles emit about 55% less NO<sub>x</sub>. Petrol light duty vehicles are subject to the same emission limits for both Euro V and Euro VI emission standards except for those petrol vehicles equipped with direct injection engines. In recent years, direct injection petrol engines are gaining popularity in EU because of better fuel economy and some Japanese vehicle manufacturers have also started developing such engines. Since they also emit fine suspended particulates (FSP or PM<sub>2.5</sub>) like diesel engines, EU introduced in the Euro VI standard a particle number (PN) limit for them as in the case of their diesel counterparts.

6. In Asia, Korea was the first economy to implement Euro VI emission standards for newly registered vehicles (except motor cycles and tricycles) which took effect from January 2015. Singapore and Taiwan will do so in September 2017 and September 2019 respectively.

7. According to our previous consultation with vehicle suppliers<sup>[6]</sup>, all major vehicle suppliers would be able to put on the local market Euro VI private cars and taxis, starting from September 2016; and Euro VI commercial vehicles starting from January 2017, except bus with design weight not more than 7 tonnes and light bus with design weight more than 3.5 tonnes, for which their major suppliers are still working on Euro VI models. We thus consulted the Panel on Environmental Affairs (Panel) of the Legislative Council on 27 November 2015 (LC Paper CB(1)180/15-16(03)) about adopting Euro VI standards for newly registered vehicles in steps – private car & taxi

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<sup>6</sup> The consultation involved the Motor Traders Association of Hong Kong (MTA), whose members are local representatives of major motor vehicle manufacturers; the Automotive Council of European Chamber of Commerce in Hong Kong (EuroCham), whose members are European vehicle manufacturers; the Right Hand Drive Motor Association (Hong Kong) Limited (RHDA), which represents parallel importers; the Hong Kong Bus Suppliers Association (HKBSA), whose members are bus manufacturers; and the Hong Kong Trucks Merchants Association Limited (HKTMA), which represents truck merchants.

from 1 September 2016; bus (double-decker) from 1 January 2018; and remaining classes (except bus of design weight not more than 7 tonnes and light bus of design weight more than 3.5 tonnes) from 1 January 2017. We undertook to report back to the Panel after consulting other relevant stakeholders. We also informed Members that we would review the control regarding new registration of diesel private cars, having regard to their emissions when in use on road and their impact on local air quality, local market situations, technological developments, and other relevant considerations.

8. With the support of the Panel, we then consulted the relevant trades (including the transport trades and vehicle maintenance trade) in December 2015 on the initial proposal and embarked on the review on diesel private cars.

## **CONSULTATION WITH THE RELEVANT TRADES ON EURO VI**

### **The Transport Trades**

9. We have consulted the relevant transport trades including operators of taxi, truck, non-franchised bus and franchised bus about the initial proposal on adopting the Euro VI standards. The transport trades asked for deferring the proposed implementation timetable for diesel trucks and non-franchised buses by at least one year (i.e. 1 January 2018) to allow more Euro VI vehicle models on the local market and more time for vehicle mechanics to pick up the maintenance skill for these vehicles of advanced engine design.

### **The Vehicle Maintenance Trade**

10. We have consulted the Hong Kong Commercial Vehicle Maintenance Association, Environmental Vehicle Repairers Association and the Hong Kong Vehicle Repair Merchants Association, all of which represent the local vehicle maintenance trade, particularly those not associated with the authorized local agents of vehicle manufacturers. They do not object to the initial proposal and are proactive in helping us organize vehicle maintenance seminars in conjunction with Vocational Training Council and vehicle manufacturers to disseminate maintenance information for

commercial vehicles equipped with advanced diesel engines. We will continue holding these seminars to help the vehicle maintenance trade master the skill to repair diesel vehicles of advanced engine design.

## **REVIEW FINDINGS REGARDING DIESEL PRIVATE CARS EMISSIONS**

11. Diesel private cars generally emit more NOx and RSP than petrol cars. The standing policy is to adopt the most stringent emission standards to discourage registration of these vehicles. To this end, we have adopted the emission standard of California of the United States (US) for diesel private car since 1998; and are currently adopting the California LEV II standards. In 2015, the State of California tightened its vehicle emission standards to LEV III. A comparison of the California LEV II and LEV III standards is at **Annex C**. California's emission standard remains the most effective means to control the emissions of diesel private cars.

12. In recent years, evidence<sup>[7]</sup> has emerged that diesel private cars emit much more NOx on road than during testing in an emission certification laboratory. A number of reputable organizations have found that Euro III to Euro VI diesel cars that could meet the respective prescribed emission certification standards in a test laboratory emit substantially above the regulated limit in real-world driving<sup>[8]</sup>.

13. Concerned about the air pollution caused by diesel cars, Mayors of Paris, Mexico City, Madrid and Athens<sup>[9]</sup> signed at the C40<sup>[10]</sup> Mayors Summit held in Mexico City in December 2016 an Air Quality Declaration committing to removing all diesel vehicles from their cities by 2025 to tackle air pollution. C40 has also been calling for the support of citizens across the world to join their campaign to reduce

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<sup>7</sup> i) Gerrit Kadijk, Pim van Mensch, and Jordy Spreen, "Detailed investigations and real-world emission performance of Euro 6 diesel passenger cars" The Netherlands Organization for applied scientific research, 18 May 2015

ii) The Department for Transport of United Kingdom (2016). Vehicle Emissions Testing Programme. April 2016

iii) Dr. Peter Mock. "European Vehicle Market Statistics Pocketbook 2014" The International Council on Clean Transportation, 2014

<sup>8</sup> Jens Gieseke, Gerben-Jan Gerbrandy, "DRAFT REPORT on the inquiry into emission measurements in the automotive sector (2016/2215(INI))", 5 December 2016, Committee of Inquiry into Emission Measurements in the Automotive Sector of the European Parliament, pp. 4

<sup>9</sup> Anne Hidalgo, Miguel Ángel Mancera, Manuela Carmena and Giorgos Kaminis. "C40 MAYORS AIR QUALITY COMMITMENT", 1 December 2016

<sup>10</sup> C40 is a network of the world's megacities committed to addressing climate change.

urban air pollution by signing a global petition<sup>[11]</sup> demanding among others vehicle manufacturers to stop producing diesel vehicles by 2025.

14. It is worth noting that the on-road NOx emissions of petrol vehicles are generally below the regulated limits<sup>[12]</sup>; and are not considered in the international community as much a concern as diesel private cars as long as they comply with the emission requirements in an emission certification test.

15. Since 2010, more diesel cars have joined the local private car fleet merely on compliance with the respective standard of the EU for petrol private cars but not with the statutory California LEV II standards. The number of registered diesel private cars tripled in about seven years from 2 066 in December 2009 to 7 278 in November 2016, much faster than the 35% growth of petrol private cars. If the growth of diesel private cars in Hong Kong is unchecked, they will continue to grow quickly, thereby posing a significant risk to our roadside air quality.

### **Diesel Private Car Suppliers**

16. Some diesel private car vendors argued that the Euro VI emission standards applicable to petrol private cars, rather than the California LEV III, should be adopted by the Government for diesel private cars despite the fact that diesel private cars are currently subject to control of California LEV II. They opined that the adoption of California LEV III would discourage first registration of diesel private cars and reduce choices for car buyers. Their key arguments are that (a) the emissions of diesel private cars should be evaluated holistically because they have an edge over petrol ones for emissions except higher NOx emissions; (b) EPD's proposed legislation changes for diesel private cars was given in short notice that time was insufficient for the manufacturers to react and (c) the relatively small population of diesel private cars is unlikely to create as much adverse impact to roadside air quality as diesel commercial vehicles.

17. We do not agree to the arguments of diesel private car vendors. Our roadside air quality has been and is still suffering from high levels of nitrogen dioxide

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<sup>11</sup> <https://www.change.org/p/car-companies-time-to-end-diesel>

<sup>12</sup> Marina Kousoulidou et.al., "Use of portable emissions measurement system (PEMS) for the development and validation of passenger car emission factors" Atmospheric Environment, September 2012

(NO<sub>2</sub>), which originates mainly from vehicular NO<sub>x</sub> emissions. As explained in paragraphs 12 to 15 above, the higher level of NO<sub>x</sub> emissions of diesel private cars during real driving will continue to pose significant risk to our roadside air quality, particularly in terms of NO<sub>2</sub> levels. Furthermore, since diesel, the dominant fuel for commercial vehicles, is not subject to fuel duty, the failure to adopt California LEV III standards will continue to tip the balance in the favour of diesel private car owing to potential fuel cost saving. Unless actions are taken, the number of diesel private cars will continue to grow at a pace much faster than petrol private cars in the local market as in the past few years, thereby creating more serious roadside air pollution. We consider that the California standards remain to be the most effective means and the more stringent California LEV III should be adopted. Our proposal to start implementing the California LEV III standard from 1 July 2017 (see paragraph 19(c) below) will allow some eight months (counting from the date we informed the vehicle supplier trade in October 2016) for diesel private car vendors to plan ahead. Henceforth, diesel private cars meeting Euro VI petrol car standards will not be accepted.

## **ACE and PANEL ON ENVIRONMENTAL AFFAIRS OF LEGISLATIVE COUNCIL**

18. Having regard to paragraphs 9 to 17 above, our revised implementation timetable is set out in paragraph 19 below. We consulted the ACE and the Panel on the revised timetable on 14 November 2016 and 19 December 2016 respectively. The ACE endorsed and the Panel was in general supportive. The Panel will hold a special meeting to receive public views on the revised proposal on 24 February 2017.

## **THE AMENDMENT REGULATION**

19. The Air Pollution Control (Vehicle Design Standards) (Emission) (Amendment) Regulation 2017 requires –

- a) newly registered light duty vehicles with design weight not more than 3.5 tonnes to comply with Euro VI emission standards according to the following

schedule:

Vehicle Class	Commencement Date	
	<i>Euro 6b</i> <i>OBD Euro 6-1</i>	<i>Euro 6c</i> <i>OBD Euro 6-2</i>
Private Car (petrol) and Taxi	1 July 2017	1 September 2019
Light bus and Goods Vehicle	1 January 2018	1 September 2020

- b) newly registered heavy duty vehicles with design weight more than 3.5 tonnes (except bus with design weight not more than 9 tonnes<sup>[13]</sup> and light bus with design weight more than 3.5 tonnes) to comply with Euro VI emission standards according to the following schedule:

Vehicle Class	Commencement Date	
	<i>Euro VI</i> <i>OBD Phase A/B</i>	<i>Euro VI</i> <i>OBD Phase C</i>
Bus (design weight more than 9 tonnes) and Goods Vehicle	1 January 2018	1 April 2019

- c) newly registered **diesel private cars** to comply with California LEV III starting from 1 July 2017
- d) newly registered bus with design weight not more than 9 tonnes and light bus with design weight more than 3.5 tonnes to continue to comply with Euro V emission standards due to the inadequate supply of Euro VI models on the local market.

20. In tightening the emission standards, we will maintain the current practice of accepting Japan and US standards that are not inferior to the Euro VI requirements.

<sup>13</sup> Revised from “not more than 7 tonnes” to “not more than 9 tonnes” at the advice of the Hong Kong Bus Suppliers Association



## **LEGISLATIVE TIMETABLE**

21. We will publish the Amendment Regulation in the Gazette on 17 February 2017 and table it at the Legislative Council for negative vetting on 22 February 2017. Subject to the negative vetting by the Legislative Council, the amendments at paragraphs 19(a) to (d) will take effect in phases starting from 1 July 2017.

## **IMPLICATIONS**

### **Environmental and Sustainability Implications**

22. The Amendment Regulation can improve roadside air quality and it is in line with the sustainability principles of avoiding environmental problems and providing a living environment which protects public health. Better air quality is also conducive to improving the quality of life.

### **Other Implications**

23. The Amendment Regulation is in conformity with the Basic Law, including the provisions concerning human rights, and will not affect the current binding effect of the Air Pollution Control (Vehicle Design Standards)(Emission) Regulations. The Amendment Regulation has no financial, civil service, gender or family implications. The Amendment Regulation has little economic implication as it is not expected to have significant effects on vehicle prices.

## **PUBLICITY**

24. A press release will be issued on 17 February 2017. A spokesman will be available for answering media enquiries.

## **ENQUIRIES**

25. For any enquiries, please contact Mr W.C. Mok, Assistant Director of Environmental Protection (Air Policy) at 2594 6310.

**Environmental Protection Department**  
**February 2017**

Air Pollution Control (Vehicle Design Standards) (Emission) (Amendment)  
Regulation 2017

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## **Air Pollution Control (Vehicle Design Standards) (Emission) (Amendment) Regulation 2017**

(Made by the Secretary for the Environment under section 43 of the Air  
Pollution Control Ordinance (Cap. 311) after consultation with the  
Advisory Council on the Environment)

- 1. Commencement**  
This Regulation comes into operation on 1 July 2017.
- 2. Air Pollution Control (Vehicle Design Standards) (Emission)  
Regulations amended**  
The Air Pollution Control (Vehicle Design Standards) (Emission)  
Regulations (Cap. 311 sub. leg. J) are amended as set out in  
sections 3 to 32.
- 3. Regulation 2 amended (interpretation)**
  - (1) Regulation 2—
    - (a) definition of *engine of direct-injection type*;
    - (b) definition of *evaporative emission*—**Repeal the definitions.**
  - (2) Regulation 2—**Add in alphabetical order**  
*“direct-injection type (直噴型)*, in relation to an engine,  
means a type of engine in which the fuel is injected  
directly into the combustion space above the piston  
crown;  
*indirect-injection type (非直噴型)*, in relation to an engine,  
means a type of engine in which the fuel is not injected

directly into the combustion space above the piston crown;”.

4. **Regulation 4A amended (vehicle design standards relating to smoke emission for motor vehicles registered on or after 1 April 1995)**

After regulation 4A(3)—

**Add**

“(4) This regulation does not apply to vehicles specified in regulations 7G(17) and (18) and 7H(6) and (7).”.

5. **Regulation 7 repealed (vehicle design standards for certain motor vehicles)**

Regulation 7—

**Repeal the regulation.**

6. **Regulation 7B repealed (vehicle design standards for certain motor vehicles registered on or after 1 January 2006)**

Regulation 7B—

**Repeal the regulation.**

7. **Regulation 7C repealed (vehicle design standards for certain motor vehicles registered on or after 1 October 2006)**

Regulation 7C—

**Repeal the regulation.**

8. **Regulation 7E amended (vehicle design standards for certain motor vehicles registered on or after 1 June 2012)**

(1) Regulation 7E, heading—

**Repeal**

**“certain motor vehicles registered on or after 1 June 2012”**

**Substitute**

**“goods vehicles, light buses and buses registered between 1 June 2012 and 31 December 2017 (both dates inclusive)”.**

(2) Regulation 7E—

**Repeal subregulations (2) and (3).**

(3) Regulation 7E(4)(d)—

**Repeal**

**“on or after 1 June 2012”**

**Substitute**

**“between 1 June 2012 and 31 December 2017 (both dates inclusive)”.**

(4) Regulation 7E(5)(c)—

**Repeal**

**“on or after 1 June 2012”**

**Substitute**

**“between 1 June 2012 and 31 December 2017 (both dates inclusive)”.**

(5) Regulation 7E—

**Repeal subregulation (6).**

(6) Regulation 7E(7)(c)—

**Repeal**

**“on or after 31 December 2012”**

**Substitute**

**“between 31 December 2012 and 31 December 2017 (both dates inclusive)”.**

- (7) Regulation 7E(8)(d)—

**Repeal**

“on or after 1 June 2012”

**Substitute**

“between 1 June 2012 and 31 December 2017 (both dates inclusive)”.

- (8) Regulation 7E(9)(d)—

**Repeal**

“on or after 1 June 2012”

**Substitute**

“between 1 June 2012 and 31 December 2017 (both dates inclusive)”.

- (9) Regulation 7E(10)(c)—

**Repeal**

“on or after 1 June 2012”

**Substitute**

“between 1 June 2012 and 31 December 2017 (both dates inclusive)”.

- (10) Regulation 7E(11)(d)—

**Repeal**

“on or after 1 June 2012”

**Substitute**

“between 1 June 2012 and 31 December 2017 (both dates inclusive)”.

**9. Regulations 7F, 7G and 7H added**

After regulation 7E—

**Add**

**“7F. Vehicle design standards for private cars and taxis registered on or after 1 July 2017**

- (1) This regulation does not apply to vehicles specified in regulation 9.
- (2) Every private car or taxi which—
  - (a) is equipped with a positive-ignition engine of indirect-injection type;
  - (b) is constructed to operate on unleaded petrol only; and
  - (c) is registered between 1 July 2017 and 31 August 2019 (both dates inclusive),must be so constructed that the emission from that private car or taxi conforms to the standards specified in paragraph (a), (c) or (d) of Part 1 of Schedule 17.
- (3) Every private car or taxi which—
  - (a) is equipped with a positive-ignition engine of indirect-injection type;
  - (b) is constructed to operate on unleaded petrol only; and
  - (c) is registered on or after 1 September 2019,must be so constructed that the emission from that private car or taxi conforms to the standards specified in paragraph (b), (c) or (d) of Part 1 of Schedule 17.
- (4) Every private car or taxi which—
  - (a) is equipped with a positive-ignition engine of direct-injection type;

- (b) is constructed to operate on unleaded petrol only; and
- (c) is registered between 1 July 2017 and 31 August 2019 (both dates inclusive),  
must be so constructed that the emission from that private car or taxi conforms to the standards specified in paragraph (a), (c) or (d) of Part 1 of Schedule 17 and paragraph (a) of Part 1 of Schedule 18.
- (5) Every private car or taxi which—
  - (a) is equipped with a positive-ignition engine of direct-injection type;
  - (b) is constructed to operate on unleaded petrol only; and
  - (c) is registered on or after 1 September 2019,  
must be so constructed that the emission from that private car or taxi conforms to the standards specified in paragraph (b), (c) or (d) of Part 1 of Schedule 17 and paragraph (b) of Part 1 of Schedule 18.
- (6) Every private car which—
  - (a) is equipped with a compression-ignition engine; and
  - (b) is registered on or after 1 July 2017,  
must be so constructed that the emission from that private car conforms to the standards specified in paragraph (c) of Part 1 of Schedule 17 and paragraph (b) of Part 1 of Schedule 18.
- (7) Every taxi which—
  - (a) is equipped with a positive-ignition engine of indirect-injection type;

- (b) is constructed to operate on liquefied petroleum gas only; and
- (c) is registered between 1 July 2017 and 31 August 2019 (both dates inclusive),  
must be so constructed that the emission from that taxi conforms to the standards specified in paragraph (a), (c) or (d) of Part 1 of Schedule 17.
- (8) Every taxi which—
  - (a) is equipped with a positive-ignition engine of indirect-injection type;
  - (b) is constructed to operate on liquefied petroleum gas only; and
  - (c) is registered on or after 1 September 2019,  
must be so constructed that the emission from that taxi conforms to the standards specified in paragraph (b), (c) or (d) of Part 1 of Schedule 17.
- (9) Every taxi which—
  - (a) is equipped with a positive-ignition engine of direct-injection type;
  - (b) is constructed to operate on liquefied petroleum gas only; and
  - (c) is registered between 1 July 2017 and 31 August 2019 (both dates inclusive),  
must be so constructed that the emission from that taxi conforms to the standards specified in paragraph (a), (c) or (d) of Part 1 of Schedule 17 and paragraph (a) of Part 1 of Schedule 18.
- (10) Every taxi which—



- (a) is equipped with a positive-ignition engine of direct-injection type;
  - (b) is constructed to operate on liquefied petroleum gas only; and
  - (c) is registered on or after 1 September 2019,  
must be so constructed that the emission from that taxi conforms to the standards specified in paragraph (b), (c) or (d) of Part 1 of Schedule 17 and paragraph (b) of Part 1 of Schedule 18.
- (11) Every taxi which—
- (a) is equipped with a positive-ignition engine of indirect-injection type;
  - (b) is constructed to operate on unleaded petrol and liquefied petroleum gas only; and
  - (c) is registered between 1 July 2017 and 31 August 2019 (both dates inclusive),  
must be so constructed that the emission from that taxi conforms to the standards specified in paragraph (a), (c) or (d) of Part 1 of Schedule 17.
- (12) Every taxi which—
- (a) is equipped with a positive-ignition engine of indirect-injection type;
  - (b) is constructed to operate on unleaded petrol and liquefied petroleum gas only; and
  - (c) is registered on or after 1 September 2019,  
must be so constructed that the emission from that taxi conforms to the standards specified in paragraph (b), (c) or (d) of Part 1 of Schedule 17.
- (13) Every taxi which—

- (a) is equipped with a positive-ignition engine of direct-injection type;
  - (b) is constructed to operate on unleaded petrol and liquefied petroleum gas only; and
  - (c) is registered between 1 July 2017 and 31 August 2019 (both dates inclusive),  
must be so constructed that the emission from that taxi conforms to the standards specified in paragraph (a), (c) or (d) of Part 1 of Schedule 17 and paragraph (a) of Part 1 of Schedule 18.
- (14) Every taxi which—
- (a) is equipped with a positive-ignition engine of direct-injection type;
  - (b) is constructed to operate on unleaded petrol and liquefied petroleum gas only; and
  - (c) is registered on or after 1 September 2019,  
must be so constructed that the emission from that taxi conforms to the standards specified in paragraph (b), (c) or (d) of Part 1 of Schedule 17 and paragraph (b) of Part 1 of Schedule 18.

**7G. Vehicle design standards for goods vehicles and light buses registered on or after 1 January 2018**

- (1) This regulation does not apply to vehicles specified in regulation 9.
- (2) Every goods vehicle or light bus which—
  - (a) is equipped with a positive-ignition engine of indirect-injection type;
  - (b) is constructed to operate on unleaded petrol only;

- (c) has a design weight of not more than 3.5 tonnes;  
and
  - (d) is registered between 1 January 2018 and 31 August 2020 (both dates inclusive),  
must be so constructed that the emission from that goods vehicle or light bus conforms to the standards specified in paragraph (a), (c) or (d) of Part 1 of Schedule 17.
- (3) Every goods vehicle or light bus which—
- (a) is equipped with a positive-ignition engine of indirect-injection type;
  - (b) is constructed to operate on unleaded petrol only;
  - (c) has a design weight of not more than 3.5 tonnes;  
and
  - (d) is registered on or after 1 September 2020,  
must be so constructed that the emission from that goods vehicle or light bus conforms to the standards specified in paragraph (b), (c) or (d) of Part 1 of Schedule 17.
- (4) Every goods vehicle or light bus which—
- (a) is equipped with a positive-ignition engine of direct-injection type;
  - (b) is constructed to operate on unleaded petrol only;
  - (c) has a design weight of not more than 3.5 tonnes;  
and
  - (d) is registered between 1 January 2018 and 31 August 2020 (both dates inclusive),  
must be so constructed that the emission from that goods vehicle or light bus conforms to the standards specified in paragraph (a), (c) or (d) of Part 1 of Schedule 17 and paragraph (a) of Part 1 of Schedule 18.

- (5) Every goods vehicle or light bus which—
- (a) is equipped with a positive-ignition engine of direct-injection type;
  - (b) is constructed to operate on unleaded petrol only;
  - (c) has a design weight of not more than 3.5 tonnes;  
and
  - (d) is registered on or after 1 September 2020,  
must be so constructed that the emission from that goods vehicle or light bus conforms to the standards specified in paragraph (b), (c) or (d) of Part 1 of Schedule 17 and paragraph (b) of Part 1 of Schedule 18.
- (6) Every goods vehicle or light bus which—
- (a) is equipped with a compression-ignition engine;
  - (b) has a design weight of not more than 3.5 tonnes;  
and
  - (c) is registered between 1 January 2018 and 31 August 2020 (both dates inclusive),  
must be so constructed that the emission from that goods vehicle or light bus conforms to the standards specified in paragraph (a) or (c) of Part 1 of Schedule 17 and paragraph (b) of Part 1 of Schedule 18.
- (7) Every goods vehicle or light bus which—
- (a) is equipped with a compression-ignition engine;
  - (b) has a design weight of not more than 3.5 tonnes;  
and
  - (c) is registered on or after 1 September 2020,  
must be so constructed that the emission from that goods vehicle or light bus conforms to the standards specified

- in paragraph (b) or (c) of Part 1 of Schedule 17 and paragraph (b) of Part 1 of Schedule 18.
- (8) Every light bus which—
- (a) is equipped with a positive-ignition engine of indirect-injection type;
  - (b) is constructed to operate on liquefied petroleum gas only;
  - (c) has a design weight of not more than 3.5 tonnes; and
  - (d) is registered between 1 January 2018 and 31 August 2020 (both dates inclusive),
- must be so constructed that the emission from that light bus conforms to the standards specified in paragraph (a), (c) or (d) of Part 1 of Schedule 17.
- (9) Every light bus which—
- (a) is equipped with a positive-ignition engine of indirect-injection type;
  - (b) is constructed to operate on liquefied petroleum gas only;
  - (c) has a design weight of not more than 3.5 tonnes; and
  - (d) is registered on or after 1 September 2020,
- must be so constructed that the emission from that light bus conforms to the standards specified in paragraph (b), (c) or (d) of Part 1 of Schedule 17.
- (10) Every light bus which—
- (a) is equipped with a positive-ignition engine of direct-injection type;

- (b) is constructed to operate on liquefied petroleum gas only;
  - (c) has a design weight of not more than 3.5 tonnes; and
  - (d) is registered between 1 January 2018 and 31 August 2020 (both dates inclusive),
- must be so constructed that the emission from that light bus conforms to the standards specified in paragraph (a), (c) or (d) of Part 1 of Schedule 17 and paragraph (a) of Part 1 of Schedule 18.
- (11) Every light bus which—
- (a) is equipped with a positive-ignition engine of direct-injection type;
  - (b) is constructed to operate on liquefied petroleum gas only;
  - (c) has a design weight of not more than 3.5 tonnes; and
  - (d) is registered on or after 1 September 2020,
- must be so constructed that the emission from that light bus conforms to the standards specified in paragraph (b), (c) or (d) of Part 1 of Schedule 17 and paragraph (b) of Part 1 of Schedule 18.
- (12) Every light bus which—
- (a) is equipped with a positive-ignition engine;
  - (b) is constructed to operate on unleaded petrol only;
  - (c) has a design weight of more than 3.5 tonnes; and
  - (d) is registered on or after 1 January 2018,

- must be so constructed that the emission from that light bus conforms to the standards specified in paragraph (b) or (c) of Part 2 of Schedule 16.
- (13) Every light bus which—
- (a) is equipped with a compression-ignition engine;
  - (b) has a design weight of more than 3.5 tonnes; and
  - (c) is registered on or after 1 January 2018,
- must be so constructed that the emission from that light bus conforms to the standards specified in paragraph (a), (b) or (c) of Part 2 of Schedule 16.
- (14) Every light bus which—
- (a) is equipped with a positive-ignition engine;
  - (b) is constructed to operate on liquefied petroleum gas only;
  - (c) has a design weight of more than 3.5 tonnes; and
  - (d) is registered on or after 1 January 2018,
- must be so constructed that the emission from that light bus conforms to the standards specified in paragraph (a), (b) or (c) of Part 2 of Schedule 16.
- (15) Every goods vehicle which—
- (a) is equipped with a positive-ignition engine;
  - (b) is constructed to operate on unleaded petrol only;
  - (c) has a design weight of more than 3.5 tonnes; and
  - (d) is registered between 1 January 2018 and 31 March 2019 (both dates inclusive),
- must be so constructed that the emission from that goods vehicle conforms to the standards specified in paragraph

- (a) or (c) of Part 2 of Schedule 17, paragraph (b) of Part 2 of Schedule 18 and Schedule 19.
- (16) Every goods vehicle which—
- (a) is equipped with a positive-ignition engine;
  - (b) is constructed to operate on unleaded petrol only;
  - (c) has a design weight of more than 3.5 tonnes; and
  - (d) is registered on or after 1 April 2019,
- must be so constructed that the emission from that goods vehicle conforms to the standards specified in paragraph (b) or (c) of Part 2 of Schedule 17, paragraph (b) of Part 2 of Schedule 18 and Schedule 19.
- (17) Every goods vehicle which—
- (a) is equipped with a compression-ignition engine;
  - (b) has a design weight of more than 3.5 tonnes; and
  - (c) is registered between 1 January 2018 and 31 March 2019 (both dates inclusive),
- must be so constructed that the emission from that goods vehicle conforms to the standards specified in paragraph (a) or (c) of Part 2 of Schedule 17, paragraphs (a) and (b) of Part 2 of Schedule 18 and Schedule 19.
- (18) Every goods vehicle which—
- (a) is equipped with a compression-ignition engine;
  - (b) has a design weight of more than 3.5 tonnes; and
  - (c) is registered on or after 1 April 2019,
- must be so constructed that the emission from that goods vehicle conforms to the standards specified in paragraph (b) or (c) of Part 2 of Schedule 17, paragraphs (a) and (b) of Part 2 of Schedule 18 and Schedule 19.

**7H. Vehicle design standards for buses registered on or after 1 January 2018**

- (1) This regulation does not apply to vehicles specified in regulation 9.
- (2) Every bus which—
  - (a) is equipped with a positive-ignition engine;
  - (b) is constructed to operate on unleaded petrol only;
  - (c) has a design weight of not more than 9 tonnes; and
  - (d) is registered on or after 1 January 2018,must be so constructed that the emission from that bus conforms to the standards specified in paragraph (b) or (c) of Part 2 of Schedule 16.
- (3) Every bus which—
  - (a) is equipped with a positive-ignition engine;
  - (b) is constructed to operate on unleaded petrol only;
  - (c) has a design weight of more than 9 tonnes; and
  - (d) is registered between 1 January 2018 and 31 March 2019 (both dates inclusive),must be so constructed that the emission from that bus conforms to the standards specified in paragraph (a) or (c) of Part 2 of Schedule 17, paragraph (b) of Part 2 of Schedule 18 and Schedule 19.
- (4) Every bus which—
  - (a) is equipped with a positive-ignition engine;
  - (b) is constructed to operate on unleaded petrol only;
  - (c) has a design weight of more than 9 tonnes; and
  - (d) is registered on or after 1 April 2019,

must be so constructed that the emission from that bus conforms to the standards specified in paragraph (b) or (c) of Part 2 of Schedule 17, paragraph (b) of Part 2 of Schedule 18 and Schedule 19.

- (5) Every bus which—
  - (a) is equipped with a compression-ignition engine;
  - (b) has a design weight of not more than 9 tonnes; and
  - (c) is registered on or after 1 January 2018,must be so constructed that the emission from that bus conforms to the standards specified in paragraph (a), (b) or (c) of Part 2 of Schedule 16.
- (6) Every bus which—
  - (a) is equipped with a compression-ignition engine;
  - (b) has a design weight of more than 9 tonnes; and
  - (c) is registered between 1 January 2018 and 31 March 2019 (both dates inclusive),must be so constructed that the emission from that bus conforms to the standards specified in paragraph (a) or (c) of Part 2 of Schedule 17, paragraphs (a) and (b) of Part 2 of Schedule 18 and Schedule 19.
- (7) Every bus which—
  - (a) is equipped with a compression-ignition engine;
  - (b) has a design weight of more than 9 tonnes; and
  - (c) is registered on or after 1 April 2019,must be so constructed that the emission from that bus conforms to the standards specified in paragraph (b) or (c) of Part 2 of Schedule 17, paragraphs (a) and (b) of Part 2 of Schedule 18 and Schedule 19.”.

**10. Regulation 8 amended (compliance with more stringent standards)**

Regulation 8—

**Repeal**

“7, 7B, 7C, 7D, 7E”

**Substitute**

“7D, 7E, 7F, 7G, 7H”.

**11. Regulation 9 amended (vehicles to which regulations 7, 7B, 7C, 7D, 7E and 14 do not apply)**

(1) Regulation 9, heading—

**Repeal**

“7, 7B, 7C, 7D, 7E”

**Substitute**

“7D, 7E, 7F, 7G, 7H”.

(2) Regulation 9—

**Repeal**

“7, 7B, 7C, 7D, 7E and 14 shall”

**Substitute**

“7D, 7E, 7F, 7G, 7H and 14 do”.

(3) Regulation 9(c), English text—

**Repeal**

“kilometres per hour”

**Substitute**

“km/h”.

**12. Regulation 10 amended (requirements as to engine and fuel)**

(1) Regulation 10(1)(b), English text—

**Repeal**

“millimetres”

**Substitute**

“mm”.

(2) Regulation 10—

**Repeal subregulation (2).**

(3) Regulation 10—

**Repeal subregulation (3)**

**Substitute**

“(3) Every taxi registered on or after 1 July 2017 equipped with an engine—

(a) must be equipped with a positive-ignition engine;

(b) must be constructed to—

(i) operate on liquefied petroleum gas only;

(ii) operate on unleaded petrol only; or

(iii) operate on liquefied petroleum gas and unleaded petrol only; and

(c) for a taxi constructed to operate on unleaded petrol—must be constructed in such a way that a petrol pump dispensing nozzle spout with an outside diameter of 23.6 mm cannot be inserted into its filling pipe.”.

(4) Regulation 10(3A)(a)(ii), English text—

**Repeal**

“millimetres”

**Substitute**

“mm”.

**13. Regulation 14 amended (certain motor vehicles to be equipped with on-board diagnostic system)**

(1) Regulation 14—

**Repeal subregulations (1), (2), (3), (4), (5), (6) and (7).**

(2) Regulation 14(8)—

**Repeal**

“7E(2), (3), (4)”

**Substitute**

“7E(4)”.

(3) Regulation 14(8)(b), Chinese text—

**Repeal**

“理事會規例 EC 第 715/2007 號”

**Substitute**

“規例 EC 第 715/2007 號”.

(4) Regulation 14(8)(c), Chinese text—

**Repeal**

“國土交通及旅遊省”

**Substitute**

“國土交通省”.

(5) Regulation 14—

**Repeal subregulation (9).**

(6) Regulation 14(10)(b), Chinese text—

**Repeal**

“理事會規例 EC 第 715/2007 號”

**Substitute**

“規例 EC 第 715/2007 號”.

(7) Regulation 14—

**Repeal subregulation (11).**

(8) Regulation 14(12)—

**Repeal**

“regulation 7E(9), (10) and (11)”

**Substitute**

“regulations 7E(9), (10) and (11), 7G(12), (13) and (14) and 7H(2) and (5)”.

(9) Regulation 14(12)(c), Chinese text—

**Repeal**

“國土交通及旅遊省”

**Substitute**

“國土交通省”.

**14. Schedule 2 repealed (vehicle design standards (emission) for certain motor vehicles registered between 1 January 1992 and 30 September 1998 (both dates inclusive))**

Schedule 2—

**Repeal the Schedule.**

**15. Schedule 2A repealed (vehicle design standards (emission) for private cars equipped with compression-ignition engines and registered between 1 January 1992 and 31 March 1998 (both dates inclusive))**

Schedule 2A—

**Repeal the Schedule.**

16. **Schedule 3 repealed (vehicle design standards (emission) for certain motor vehicles registered between 1 April 1995 and 30 September 1998 (both dates inclusive))**

Schedule 3—

**Repeal the Schedule.**

17. **Schedule 4 repealed (vehicle design standards (emission) for private cars equipped with compression-ignition engines and registered on or after 1 April 1998)**

Schedule 4—

**Repeal the Schedule.**

18. **Schedule 5 repealed (vehicle design standards (emission) for certain motor vehicles registered between 1 October 1998 and 30 June 1999 (both dates inclusive))**

Schedule 5—

**Repeal the Schedule.**

19. **Schedule 6 repealed (vehicle design standards (emission) for certain motor vehicles registered between 1 October 1998 and 30 September 2001 (both dates inclusive) and for certain light buses registered between 1 October 2001 and 31 July 2003 (both dates inclusive))**

Schedule 6—

**Repeal the Schedule.**

20. **Schedule 6A repealed (vehicle design standards (emission) for certain motor vehicles registered on or after 1 October 2001 and for certain light buses registered on or after 1 August 2003)**

Schedule 6A—

**Repeal the Schedule.**

21. **Schedule 7 repealed (vehicle design standards (emission) for certain motor vehicles registered between 1 July 1999 and 31 December 2000 (both dates inclusive), for taxis equipped with compression-ignition engines and registered between 1 July 1999 and 31 July 2001 (both dates inclusive) and for certain motor vehicles registered between 1 July 1999 and 30 September 2001 (both dates inclusive))**

Schedule 7—

**Repeal the Schedule.**

22. **Schedule 8 repealed (vehicle design standards (emission) for motor cycles registered on or after 1 October 1999)**

Schedule 8—

**Repeal the Schedule.**

23. **Schedule 9 repealed (vehicle design standards (emission) for motor tricycles registered on or after 1 October 1999)**

Schedule 9—

**Repeal the Schedule.**

24. **Schedule 10 repealed (vehicle design standards (emission) for certain motor vehicles registered between 1 January 2001 and 31 December 2001 (both dates inclusive))**

Schedule 10—



**Repeal the Schedule.**

25. **Schedule 10A repealed (vehicle design standards (emission) for certain taxis registered on or after 1 August 2001)**

Schedule 10A—

**Repeal the Schedule.**

26. **Schedule 10B repealed (vehicle design standards (emission) for certain motor vehicles registered on or after 1 January 2002)**

Schedule 10B—

**Repeal the Schedule.**

27. **Schedule 10C repealed (vehicle design standards (emission) for certain light buses registered on or after 1 August 2003)**

Schedule 10C—

**Repeal the Schedule.**

28. **Schedule 11 repealed (motor vehicles registered between 1 January 2001 and 31 May 2012 (both dates inclusive) with positive-ignition engines not requiring installation of on-board diagnostic system)**

Schedule 11—

**Repeal the Schedule.**

29. **Schedule 12 repealed (vehicle design standards (emission) for certain motor vehicles registered on or after 1 January 2006)**

Schedule 12—

**Repeal the Schedule.**

30. **Schedule 13 repealed (vehicles design standards (emission) for certain motor vehicles registered between 1 October 2006 and 31 May 2012 (both dates inclusive))**

Schedule 13—

**Repeal the Schedule.**

31. **Schedule 16 amended (vehicle design standards (emission) for certain motor vehicles registered on or after 1 June 2012)**

- (1) Schedule 16—

**Repeal**

“[reg. 7E]”

**Substitute**

“[regs. 7E, 7G & 7H]”.

- (2) Schedule 16, Chinese text, Part 1, paragraph (a)(i)—

**Repeal**

“委員會規例 EC 第 715/2007 號”

**Substitute**

“規例 EC 第 715/2007 號”.

- (3) Schedule 16, Part 1, paragraph (a)(ii)—

**Repeal**

“of the European Parliament and of the Council”.

- (4) Schedule 16, Chinese text, Part 1, paragraph (a)(iii)—

**Repeal**

“理事會規例 EC 第 715/2007 號”

**Substitute**

“規例 EC 第 715/2007 號”.

- (5) Schedule 16, Part 1, paragraph (b)(i), after “America”—

**Add**

“as at 20 March 2012”.

- (6) Schedule 16, Part 1, paragraph (b)(ii), after “2004”—

**Add**

“as at 20 March 2012”.

- (7) Schedule 16, Chinese text, Part 1, paragraph (c)(i)(A) and (B), (ii) and (iii)—

**Repeal**

“國土交通及旅遊省”

**Substitute**

“國土交通省”.

- (8) Schedule 16, Chinese text, Part 2, paragraph (a)(i)—

**Repeal**

“議會指令 2005/55/EC”

**Substitute**

“指令 2005/55/EC”.

- (9) Schedule 16, Chinese text, Part 2, paragraph (a)(iii)—

**Repeal**

“議會指令 2007/46/EC”

**Substitute**

“指令 2007/46/EC”.

- (10) Schedule 16, Part 2, paragraph (b)(i), after “America”—

**Add**

“as at 20 March 2012”.

- (11) Schedule 16, Part 2, paragraph (b)(ii)(A), after “2008”—

**Add**

“as at 20 March 2012”.

- (12) Schedule 16, Part 2, paragraph (b)(ii)(B), after “2007”—

**Add**

“as at 20 March 2012”.

- (13) Schedule 16, Chinese text, Part 2, paragraph (c)(i)(A) and (B), (ii) and (iii)—

**Repeal**

“國土交通及旅遊省”

**Substitute**

“國土交通省”.

**32. Schedules 17, 18 and 19 added**

After Schedule 16—

**Add**

**“Schedule 17**

[regs. 7F, 7G & 7H]

**Vehicle Design Standards (Emission) for Certain  
Motor Vehicles Registered on or after 1 July 2017**

**Part 1**

- (a) European Union Motor Vehicle Emission Standards,  
comprising all of the following requirements—

- (i) All the testing procedures, requirements and emission limits including those for on-board diagnostic system (except Type VI test) as specified in Regulation (EC) No. 715/2007 of the European Parliament and of the Council and Commission Regulation (EC) No. 692/2008 as amended by its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/646.
  - (ii) The emission limit values for Type I test as specified in Table 2 (Euro 6 Emission Limits) of Annex I to Regulation (EC) No. 715/2007 of the European Parliament and of the Council as amended by Commission Regulation (EC) No. 692/2008 and its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/646.
  - (iii) The emission standards and on-board diagnostic system standards as specified in Row W, X, Y, ZA, ZB or ZC of Table 1 of Appendix 6 to Annex I to Commission Regulation (EC) No. 692/2008 as amended by its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/646.
  - (iv) All the type approval requirements as specified in Directive 2007/46/EC of the European Parliament and of the Council as amended by its subsequent amendments up to and including amendments made by Regulation (EU) No. 2015/758.
- (b) European Union Motor Vehicle Emission Standards, comprising all of the following requirements—

- (i) All the testing procedures, requirements and emission limits including those for on-board diagnostic system (except Type VI test) as specified in Regulation (EC) No. 715/2007 of the European Parliament and of the Council and Commission Regulation (EC) No. 692/2008 as amended by its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/646.
  - (ii) The emission limit values for Type I test as specified in Table 2 (Euro 6 Emission Limits) of Annex I to Regulation (EC) No. 715/2007 of the European Parliament and of the Council as amended by Commission Regulation (EC) No. 692/2008 and its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/646.
  - (iii) The emission standards and on-board diagnostic system standards as specified in Row ZD, ZE or ZF of Table 1 of Appendix 6 to Annex I to Commission Regulation (EC) No. 692/2008 as amended by its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/646.
  - (iv) All the type approval requirements as specified in Directive 2007/46/EC of the European Parliament and of the Council as amended by its subsequent amendments up to and including amendments made by Regulation (EU) No. 2015/758.
- (c) United States of America Motor Vehicle Emission Standards, comprising all of the following requirements—
- (i) All the testing procedures, requirements and emission limits including those for on-board diagnostic system as

- specified in Title 13 of the California Code of Regulations of the United States of America as at 23 December 2016.
- (ii) The emission limit values as specified in “LEV III” in section 1961.2 of Article 2 of Chapter 1 of Division 3 of Title 13 of the California Code of Regulations of the United States of America as at 23 December 2016.
  - (iii) All the type approval requirements administered by the California Air Resources Board.
- (d) Japan Motor Vehicle Emission Standards, comprising all of the following requirements—
- (i) All the testing procedures, requirements and emission limits including those for on-board diagnostic system as specified in—
    - (A) the Safety Regulation for Road Vehicles (i.e. the Ministry of Transport Ordinance No. 67 of 28 July 1951) as amended by its subsequent amendments up to and including amendments made by the Ministry of Land, Infrastructure, Transport and Tourism Ordinance No. 18 of 31 March 2015; and
    - (B) the Announcement that Prescribes Details of Safety Regulations for Road Vehicles (i.e. the Ministry of Land, Infrastructure and Transport Announcement No. 619 of 15 July 2002) as amended by its subsequent amendments up to and including amendments made by the Ministry of Land, Infrastructure, Transport and Tourism Announcement No. 459 of 31 March 2015.
  - (ii) The emission limit values as specified in Article 41 of the Announcement that Prescribes Details of Safety Regulations for Road Vehicles (i.e. the Ministry of

- Land, Infrastructure and Transport Announcement No. 619 of 15 July 2002) as amended by its subsequent amendments up to and including amendments made by the Ministry of Land, Infrastructure, Transport and Tourism Announcement No. 459 of 31 March 2015.
- (iii) All the type approval requirements administered by the Ministry of Land, Infrastructure, Transport and Tourism of Japan.

## Part 2

- (a) European Union Motor Vehicle Emission Standards, comprising all of the following requirements—
- (i) All the testing procedures, requirements and emission limits including those for on-board diagnostic system as specified in Regulation (EC) No. 595/2009 of the European Parliament and of the Council and Commission Regulation (EU) No. 582/2011 as amended by its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/1718.
  - (ii) The emission limit values of gaseous and particulate pollutants from the engine as specified in the Table entitled “Euro VI Emission Limits” of Annex I to Regulation (EC) No. 595/2009 of the European Parliament and of the Council as amended by Commission Regulation (EU) No. 582/2011 and its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/1718.
  - (iii) The requirements as specified in—

- (A) Row A of Table 1 of Appendix 9 to Annex I to Commission Regulation (EU) No. 582/2011 as amended by its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/1718, for vehicle models equipped with compression-ignition engines; or
- (B) Row B of Table 1 of Appendix 9 to Annex I to Commission Regulation (EU) No. 582/2011 as amended by its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/1718, for vehicle models equipped with positive-ignition engines.
- (iv) All the type approval requirements as specified in Directive 2007/46/EC of the European Parliament and of the Council as amended by its subsequent amendments up to and including amendments made by Regulation (EU) No. 2015/758.
- (b) European Union Motor Vehicle Emission Standards, comprising all of the following requirements—
  - (i) All the testing procedures, requirements and emission limits including those for on-board diagnostic system as specified in Regulation (EC) No. 595/2009 of the European Parliament and of the Council and Commission Regulation (EU) No. 582/2011 as amended by its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/1718.
  - (ii) The emission limit values of gaseous and particulate pollutants from the engine as specified in the Table entitled “Euro VI Emission Limits” of Annex I to

- Regulation (EC) No. 595/2009 of the European Parliament and of the Council as amended by Commission Regulation (EU) No. 582/2011 and its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/1718.
- (iii) The requirements as specified in Row C of Table 1 of Appendix 9 to Annex I to Commission Regulation (EU) No. 582/2011 as amended by its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/1718.
  - (iv) All the type approval requirements as specified in Directive 2007/46/EC of the European Parliament and of the Council as amended by its subsequent amendments up to and including amendments made by Regulation (EU) No. 2015/758.
  - (c) United States of America Motor Vehicle Emission Standards, comprising all of the following requirements—
    - (i) All the testing procedures, requirements and emission limits including those for on-board diagnostic system for 2017 and later model years as specified in the Code of Federal Regulations Title 40 Protection of Environment Part 86 Control of Emissions from New and In-use Highway Vehicles and Engines of the United States of America including and up to the amendments on 25 October 2016.
    - (ii) The emission limit values as specified in—
      - (A) section 86.008-10 entitled “Emission standards for 2008 and later model year Otto-cycle heavy-duty engines and vehicles” in the Code of Federal Regulations Title 40 Protection of Environment

Part 86 Control of Emissions from New and In-use Highway Vehicles and Engines of the United States of America including and up to the amendments on 25 October 2016, for vehicle models equipped with positive-ignition engines including all the phase-in requirements for 2009; or

- (B) section 86.007-11 entitled “Emission standards and supplemental requirements for 2007 and later model year diesel heavy-duty engines and vehicles” in the Code of Federal Regulations Title 40 Protection of Environment Part 86 Control of Emissions from New and In-use Highway Vehicles and Engines of the United States of America including and up to the amendments on 25 October 2016, for vehicle models equipped with compression-ignition engines including all the phase-in requirements for 2010.
- (iii) All the type approval requirements administered by the United States Environment Protection Agency.

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## Schedule 18

[regs. 7F, 7G & 7H]

## Vehicle Design Standards for Particulate Emission from Certain Motor Vehicles Registered on or after 1 July 2017

### Part 1

- (a) Number of particles emitted must not exceed  $6 \times 10^{12}$  per kilometre, as measured by the Type I test procedure specified in Regulation (EC) No. 715/2007 of the European Parliament and of the Council and Commission Regulation (EC) No. 692/2008 as amended by its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/646.
- (b) Number of particles emitted must not exceed  $6 \times 10^{11}$  per kilometre, as measured by the Type I test procedure specified in Regulation (EC) No. 715/2007 of the European Parliament and of the Council and Commission Regulation (EC) No. 692/2008 as amended by its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/646.

### Part 2

- (a) Number of particles emitted must not exceed  $8 \times 10^{11}$  per kilowatt-hour, as measured by the Worldwide Harmonised Steady State Cycle (WHSC) test procedure specified in Regulation (EC) No. 595/2009 of the European Parliament and of the Council and Commission Regulation (EU) No. 582/2011 as amended by its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/1718.

- (b) Number of particles emitted must not exceed  $6 \times 10^{11}$  per kilowatt-hour, as measured by the Worldwide Harmonised Transient Driving Cycle (WHTC) test procedure specified in Regulation (EC) No. 595/2009 of the European Parliament and of the Council and Commission Regulation (EU) No. 582/2011 as amended by its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/1718.

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## Schedule 19

[regs. 7G & 7H]

### Portable Emissions Measurement System Demonstration Test at Type Approval

Portable emissions measurement system demonstration test at type approval as specified in Appendix 1 to Annex VI to Commission Regulation (EU) No. 582/2011 as amended by its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/1718.”.

Secretary for the Environment

2017

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### Explanatory Note

This Regulation amends the Air Pollution Control (Vehicle Design Standards) (Emission) Regulations (Cap. 311 sub. leg. J) (*principal Regulations*). In order to reduce vehicular emissions, this Regulation imposes more stringent vehicle design standards on—

- (a) private cars and taxis first registered on or after 1 July 2017; and
  - (b) other motor vehicles first registered on or after 1 January 2018, except buses having a design weight of not more than 9 tonnes, light buses having a design weight of more than 3.5 tonnes, special purpose vehicles, motor cycles and motor tricycles.
2. Regulations 7, 7B, 7C and 7E(2), (3) and (6) of the principal Regulations and their associated Schedules (except Schedule 16) are obsolete and therefore repealed (sections 5 to 8, 14 to 27, 29 and 30).
3. New regulation 7F specifies enhanced vehicle design standards for certain private cars and taxis which are registered on or after 1 July 2017 (section 9).
4. New regulation 7G specifies enhanced vehicle design standards for certain goods vehicles and light buses which are registered on or after 1 January 2018 (section 9).
5. New regulation 7H specifies enhanced vehicle design standards for certain buses which are registered on or after 1 January 2018 (section 9).
6. Regulation 10 of the principal Regulations is amended to allow the use of petrol-cum-LPG taxis (section 12).

7. Regulation 14(1), (2), (3), (4), (5), (6), (7), (9) and (11) of the principal Regulations and its associated Schedule 11 are obsolete and therefore repealed (sections 13 and 28).
8. The new Schedule 17 sets out the Euro VI Motor Vehicle Emission Standards adopted in the European Union and the emission standards adopted in the United States of America and Japan, to be complied with by certain motor vehicles first registered on or after 1 July 2017. Part 1 of the new Schedule 17 covers certain motor vehicles that have a design weight of not more than 3.5 tonnes. Part 2 of that Schedule covers certain motor vehicles that have a design weight of more than 3.5 tonnes (section 32).
9. The new Schedule 18 sets out the vehicle design standards for particulate emission from certain motor vehicles adopted in the European Union (section 32).
10. The new Schedule 19 sets out the standards of portable emissions measurement system demonstration test at type approval for heavy-duty vehicles having a design weight of more than 3.5 tonnes (section 32).



**Euro V and Euro VI Emission Standards for Motor Vehicles**

Design Weight	Vehicle Class	Durability (km)	Emission Limits							
			Nitrogen Oxides		Volatile Organic Compounds (Hydrocarbons)		Respirable Suspended Particulates		Particle Number	
			Euro V	Euro VI	Euro V	Euro VI	Euro V	Euro VI	Euro V	Euro VI
Not more than 3.5 tonnes	Private Car (Petrol)	160,000	60	60	100	100	4.5	4.5	Not	$6 \times 10^{11} \wedge \#$
	Taxi (Petrol/LPG)		(mg/km)	(mg/km)	(mg/km)	(mg/km)	(mg/km)	(mg/km)	Applicable	(#/km)
	Goods Vehicle (Petrol)		82	82	160	160	4.5	4.5	Not	$6 \times 10^{11} \wedge \#$
	Light Bus (Diesel)		280	125	Not Applicable		4.5	4.5	$6 \times 10^{11}$	$6 \times 10^{11}$
	Goods Vehicle (Diesel)									
More than 3.5 tonnes	Goods Vehicle (weight not more than 16 tonnes)	300,000	2,000	400	460	130	20	10	Not	$8 \times 10^{11}$
	Goods Vehicle (weight more than 16 tonnes)	700,000								
	Bus (weight more than 9 tonnes)	700,000								

**Remark:**  $\wedge$  For direct injection engine only.

# Preliminary PN limit  $6 \times 10^{12}$  (#/km) for Euro 6b; and final PN limit  $6 \times 10^{11}$  (#/km) for Euro 6c

**California LEV II and LEV III Standards for Private Cars**

<b>California Standards</b>	<b>Durability (km)</b>	<b>Emission Limits</b>		
		<b>Non Methane Organic Gas (mg/km)</b>	<b>Nitrogen Oxides (mg/km)</b>	<b>Respirable Suspended Particulates (mg/km)</b>
LEV II	193,200	56	43	6.21
LEV III	241,500	99		6.21